

Rhodora

JOURNAL OF

THE NEW ENGLAND BOTANICAL CLUB

Vol. 14.

December, 1912.

No. 168.

ALCHEMILLA ALPINA AND A. VULGARIS IN NORTH AMERICA.

M. L. FERNALD AND K. M. WIEGAND.

THE first record of an indigenous *Alchemilla* in northeastern North America was by Pursh who in his *Flora Americae Septentrionalis* (1814) reported *A. alpina* "On the peaks of high mountains in Vermont and New Hampshire,"¹ with, however, the qualifying and somewhat characteristic statement: "Whether the American species is the true *A. alpina* or not, I am not able to determine, as I am at present in want of specimens to compare them; but the plate in the *Flora Danica* represents the American plant fully, as far as recollection can decide." In the *Flora of North America* Torrey & Gray gave *A. alpina* from "Greenland: also on the summits of the White Mountains, New Hampshire, and Green Mountains, Vermont, according to Pursh; but this is extremely doubtful."² In the first edition of the *Manual*, after citing the plant from New Hampshire and Vermont on the authority of Pursh, Asa Gray added: "but no one else has found the plant in the country."³ To the second edition of the *Manual* *A. alpina* was not definitely admitted, but Gray made the note: "A. ALPINA, L., is said by Pursh to grow on the Green and White Mountains, New England; but there is most probably some mistake about it."⁴ This disposition of the case was maintained through the fifth edition; and in the sixth and seventh editions, since Pursh's record had remained unverified, the species was not even mentioned.

¹ Pursh, *Fl. Am. Sept.* 112 (1814).

² Torr. & Gray *Fl. I.* 432 (1840).

³ Gray, *Man.* 119 (1848).

⁴ Gray, *Man. ed. 2*, 115 (1856).

Since the White Mountains and the Green Mountains have been so extensively explored by botanists for fully a century and in all this time, so far as records show, no specimens of *Alchemilla* have ever been found there, it has long seemed evident that Pursh's report, based, as he himself said, merely on a recollection of some plant which he had seen, must have been an error and should be classed with his long discredited reports of *Dryas integrifolia* (*D. tenella*) and *Pleurogyne rotata* (*Swertia pusilla*) from the White Mountains.

Recently, however, in the *North American Flora* Rydberg has given the range of *Alchemilla alpina* in America as: "from Greenland to Miquelon and the White Mountains of New Hampshire."¹ As to the origin of the Miquelon record we have no information, but the species is not included in Delamare, Renauld, and Cardot's *Flora Miquelonensis* (1888), in Bonnet's *Florule des Isles Saint Pierre et Miquelon*,² nor in Waghorne's publications on Newfoundland and the French Islands. In his statement of range above quoted Rydberg does not include western North America, but in the Gray Herbarium there is a specimen collected by C. H. Demetrio, July 5, 1888, "On the trail to the Lake of the Clouds, Custer Co., Colorado," a station which, it would seem, is not generally known since there is no mention of the occurrence of the plant in Colorado either in Rydberg's *Flora of Colorado* or in Coulter and Nelson's *Manual of Rocky Mountain Botany*.

Although the records of *A. alpina* from New Hampshire and Vermont are probably errors, the fact that the plant has once been found in Colorado and is known in Greenland indicates that it should be watched for in Labrador, Newfoundland, and on the mountains of Gaspé.

The only *Alchemilla* clearly indigenous in northeastern America is the polymorphous *A. vulgaris* L., which by some European authors is considered as separable into many closely similar though distinct species, but by others is regarded as a single species with numerous sub-species, varieties and forms. A study of the plants in the field in Newfoundland and Labrador, and of all the available herbarium material from the Northeast convinces the writers that the characters commonly relied upon to separate species (mainly those of pubescence) are so highly variable as entirely to obscure any practical specific

¹ N. A. Fl., XXII. 379 (1908).

² Journ. Botanique, I. (1887).

limits. Nevertheless, in the regions of Newfoundland, Labrador and eastern Canada where the species has been found it shows in each geographical area fairly well marked though not constant tendencies in the distribution and direction of the trichomes. It seems to the writers, therefore, that these tendencies should be recognized, but should be regarded as geographical varieties, and not as species.

The most satisfactory statement of the characters of the forms of *Alchemilla vulgaris* is that given in Harald Lindberg's *Die Nordischen Alchemilla vulgaris-Formen*.¹ The writers, without claiming any originality, have therefore abstracted freely from the characterizations given by Lindberg, who, however, in his text has designated the forms by binomials.

The first report of *Alchemilla vulgaris* in America seems to have been by La Pylaie² who reports "l'*Alchemilla officinalis*, dans la partie inférieure des coteaux" of Quirpon Island near the northeastern extremity of Newfoundland, with the comment that he had seen it in no other part of Newfoundland. The next report seems to have been in Hooker's *Flora Boreali-Americana*, where Labrador specimens are cited but without definite locality. In 1870, D. A. Watt³, reporting upon a collection of Labrador plants from the Rev. S. R. Butler, listed *A. vulgaris* as "abundant on hill-sides" about L'Anse Amour in southern Labrador.

In an editorial note in the Bulletin of the Torrey Botanical Club, in 1886, the late W. H. Leggett said: "In Nova Scotia, along roadsides, was also found the Ladies' Mantle, *Alchemilla vulgaris*, L., which is undoubtedly of European origin"⁴ and in the following year Professor George Lawson,⁵ referring to Leggett's note, said: "*Alchemilla vulgaris*. . . . was first observed at Lucyfield, Halifax County, in the summer of 1864. There is but one patch, which I have seen in flower during every subsequent season; but it does not spread. Botanists here have not noticed it elsewhere. It would consequently be of interest to note the 'roadside' localities more specifically in a future number of the BULLETIN. The *Alchemilla* is an introduced plant of European origin (as you state); and I had not regarded the one patch found in 1864 as sufficient to establish it as a permanent

¹ Lindberg fil. Acta Soc. Sci. Fenn. XXXVII. no. 10 (1909).

² La Pylaie, Voy. à l'île de Terre-Neuve, 79 (1825).

³ Watt, Can. Nat. Ser. 2, V. 351 (1870).

⁴ Leggett, Bull. Torr. Bot. Club, XIII. 232 (1886).

⁵ G. Lawson, Bull. Torr. Bot. Club, XIV. 10 (1887).

immigrant." Mr. Leggett, in response to Prof. Lawson's request, made the editorial note that the *Alchemilla* "was found at Digby, on the outskirts of the town in August, 1879, on the road toward 'the Joggins'"; and Dr. T. J. W. Burgess recorded *Alchemilla vulgaris*: "found in great abundance about Yarmouth, Nova Scotia, by Professor Macoun and myself in 1883, growing in fields, etc., bordering on the sea shore."¹ Macoun, in the *Catalogue of Canadian Plants*, adds to the Nova Scotia records North Sydney and Louisburg; and subsequently various stations in Newfoundland and Labrador have been reported. In 1906 Miss E. F. Fletcher found a few plants, reported as *A. pratensis*,² in a chicken yard at Westford, Massachusetts. At this last station the plant is obviously of casual introduction, and it is possible that in Nova Scotia the *Alchemilla*, as maintained by its discoverers, is introduced; but in Newfoundland and Labrador the plant is plainly indigenous, forming extensive colonies near streams upon calcareous slopes and gravels.

The varieties of *Alchemilla vulgaris* in North America, excluding Greenland, are as follows:

* Pubescence of stem and petioles spreading.

+ Pedicels and branchlets of the inflorescence glabrous: hypanthium glabrous or sometimes sparsely hirsute.

++ Stem hairy nearly up to the pedicels: upper surface of leaf glabrous or nearly so.

A. VULGARIS L. Sp. Pl. 123 (1753). *A. pratensis* Schmidt, Flor. Boëmica inchoata, cent. III. 88 (1794?); Robinson & Fernald in Gray, Man. ed. 7, 493 (1908) in part; Rydberg, N. A. Flora XXII. 378 (1908) in part; Lindberg fil., Die Nord. Alchemilla vulg.-Formen, 88 (1909). *A. vulgaris, eu-vulgaris* b. *pratensis*, Asch. & Graeb. Syn. Mitteleurop. Fl. VI. Ab. i. 408 (1902).—Specimens examined. NOVA SCOTIA: naturalized, railroad tracks and old fields bordering the sea, Yarmouth, June, 1883, *T. J. W. Burgess*; banks and meadows along the sea-coast, Yarmouth, June 22 & 25, 1883, *J. Macoun*; roadsides, Yarmouth, June 22-29, 1901, *Howe & Lang*, no. 114; moist roadside-bank, Yarmouth, Aug. 19, 1908, *Eames & Godfrey*, no. 7012; very common at Yarmouth, June 5, —, *J. Macoun*, no. 80,665; ditches along the streets, Digby, Aug. 25, —, *J. Macoun*, no. 80,666.

++ Stem hairy only at the base: leaves hairy above.

Var. *filicaulis* (Buser), n. comb. *A. filicaulis* Buser, Bull. Herb. Bois. I. App. ii. 22 (1893); Rydberg, N. A. Flora XXII. 378 (1908).

¹ T. J. W. Burgess, Bull. Torr. Bot. Club, XIV. 43 (1887).

² See RHODORA, IX: 92 (1907).

A. vulgaris **filicaulis*¹ Murbeck, Bot. Notiser. (1895) 265. *A. vulgaris* θ *minor* Briq. in Burnat, Fl. Alp. Marit. III. 153 (1899), not *A. minor* Huds. Fl. Ang. 59 (1762) according to Lindberg fil. *A. minor* **filicaulis* Lindb. fil. Nord. Alch. vulg.-Form. 96 (1909).— Specimens examined. NEWFOUNDLAND: without locality, Sir Joseph Banks; open woods, Shoal Point, north of Bay of Islands, June 16, 1896, Waghorne; gravel of Steady Brook, near mouth of Humber River, July 15, 1910, calcareous cliffs, Steady Brook Falls, July 16, 1910, rocks close to water, marble-region of the Humber River, July 18, 1910, Fernald & Wiegand, nos. 3614, 3615, and 3616. Reported by Rydberg from Labrador.

+ + Pedicels, branchlets of the inflorescence, and the hypanthium hirsute: upper surface of leaf hairy.

Var. **vestita** (Buser), n. comb. *A. minor* Huds. Fl. Angl. 59 (1762) according to Lindberg fil. l. c. 91 (1909). *A. filicaulis* f. *vestita* Buser, Bull. Herb. Boiss. I. App. ii. 23 (1893). *A. vulgaris* **vestita* Murbeck, Bot. Notiser. (1895) 265. *A. pratensis* Robinson & Fernald in Gray, Man. ed. 7, 493 (1908) and Rydberg, N. A. Flora XXII. 378 (1908), as to Massachusetts plant.— Specimens examined. LABRADOR: gravelly border of stream, Forteau, July 30, 1910, Fernald & Wiegand, no. 3617; abundant by streams and springs on calcareous terraces, Blanc Sablon, July 30, 1910, Fernald & Wiegand, no. 3618 (also observed on the QUEBEC side of the Blanc Sablon River). MASSACHUSETTS: introduced from Europe in a chicken yard, Westford, September 22, 1906, Miss E. F. Fletcher (RHODORA, IX. 92 (1907)).

* * Pubescence of stem and petioles appressed, sometimes very sparse: hypanthium glabrous.

+ Stems hairy nearly throughout: upper surface of leaves hairy to glabrous; veins beneath hairy from below the middle to the apex, and mesophyll somewhat hairy: flowers in glomerules.

Var. **comosa** (Brenner), n. comb. *A. glomerulans* Buser, Bull. Herb. Boiss. I. App. ii. 30 (1893); Rydberg, N. A. Flora, XXII. 378 (1908); Lindberg fil. l. c. 105 (1909). *A. obtusa*, var. *comosa* M. Brenner, Meddel. Soc. p. F. et Fl. Fenn. h. XXIII. 42 (1898). *A. vulgaris*, subsp. *sylvestris*, β *glomerulans* E. G. Camus in Rouy & Camus, Fl. Franc. VI. 456 (1900). *A. vulgaris* **glomerulans* Ahlfvengr. in Neumann och Ahlfvengren, Sveriges Fl. 377 (1901).— Seen by us only from Greenland, but reported by Rydberg from Baffin Bay Region and Labrador.

+ + Stems hairy only below: upper surface of leaves glabrous except rarely on the veins; veins below hairy only near the apex; mesophyll glabrous: inflorescence diffuse.

¹ As used by the Scandinavian botanists asterisks and similar signs indicate subspecies as opposed to varieties.

Var. GRANDIS Blytt, Enum. Pl. vasc. Christ. 21 (1844). *A. alpestris* Schmidt, Fl. Boëmica inchoata, Cent. III. 88 (1794); Lindb. fil. l. c. 127 (1909). *A. vulgaris* **alpestris* Murbeck, Bot. Notiser (1895) 266. *A. vulgaris* δ *alpestris* Briquet in Burnat, Fl. Alp. marit. III. 149 (1899).—Specimens examined. LABRADOR: l'Anse au Loup, August 21, 1892, *Waghorne*, Herb. Geol. Survey Canada, no. 8073. QUEBEC: Little Métis, August 15, 1898, *Mrs. Brodie*, Herb. Geol. Surv. Can., no. 19,513; *J. Fowler*, July 24, 1906.

RARE PLANTS IN GROTON, MASSACHUSETTS.

BY CLARENCE H. KNOWLTON.

THE town of Groton lies in the northwestern part of Middlesex County, Massachusetts, the second town south of the New Hampshire line. It is full of most interesting glacial deposits. A series of eskers and kames obstruct the drainage in the eastern part of the town, and enclose a chain of kettle-hole ponds. In the center of the town is a group of large drumlins, almost perfectly symmetrical, and to the west the land slopes down into a broad sand-plain, through which the Nashua and Squannacook Rivers flow, but little below the level of the plain.

In general, the flora is of the dry-woods, sand-plain type, but the drumlins and adjacent land are more fertile. Here the chestnut is a common tree. I have found in Groton the following plants which are of special interest. Three of them I have already announced in a previous article (RHOD. IX, 11-15, 1907) but the additional information here may be of interest.

In September, 1905, I discovered a single plant of *Linaria genistae-folia* Mill. by the railway embankment half a mile above the village. No other specimens were in sight, and I supposed the plant to be a waif. On October 9 of this year, however, I was surprised to find several good specimens along the Willow Road near the railway station. Later in the day I found a large colony on both sides of the highway, and spreading into an orchard, near my original station. There were at least 150 plants here, all in good flower and fruit. This plant is given in the sixth edition of Gray's Manual on the basis of